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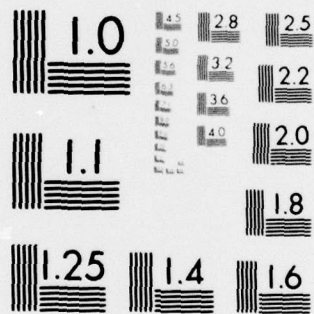
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9 Research Memorandum 63-12

6 A STUDY OF EARLY SERVICE CAREER MOS SHIFTS FOR PERSONNEL
ALLOCATED TO EIGHT SELECTED MOS

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11 December 1963

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A STUDY OF EARLY SERVICE CAREER MOS SHIFTS FOR PERSONNEL ALLOCATED TO EIGHT SELECTED MOS

BACKGROUND

One requirement placed upon the U. S. Army Personnel Research Office (APRO) in FY 63 was the development of the capability for implementation of an allocation system providing an optimal match of men to jobs (Boldt, 1962). Development of such a system was only a partial answer to the Army's personnel utilization problem, since the system was designed to govern the flow of personnel from basic combat training to Advanced Individual Training, and did not deal with later career progressions. It was speculated, by those responsible for the operational administration of the classification system, that the excellence of the initial distribution of personnel was nullified or at least reduced through inappropriate later assignments. Because of the above considerations, APRO became interested in conducting a number of follow-up studies on service careers of enlistee personnel. The present study was conducted in response to DCSPER's concern over lack of correspondence between classification and utilization of personnel. Fifteen MOS and two entry groups were pinpointed as being of particular concern because of chronic over- or under-strength. Of the fifteen MOS, MOS 111 and 112 were considered in a separate follow-up study of infantry personnel (Wiskoff and Pentony, 1963). Eight of the other separate MOS and all but three MOS within the two entry groups were investigated without detailed research. The remaining eight MOS became the concern of the present investigation.

PROBLEM

✓ The general aim of the ^{this} ~~present~~ study ^{is} was to evaluate the retention of personnel, both quantitatively and qualitatively, in eight MOS: 050, 051, 140, 202, 240, 246, 250, and 355. The specific service career time period covered by the study was that beginning with entry into service and extending approximately two years subsequent to entry. During this time frame, five service career points per man were examined: (1) DA allocated MOS; (2) first Advanced Individual Training MOS; (3) second Advanced Individual Training MOS; (4) First Duty MOS; and (5) Second Duty MOS. The principal objective of the study ~~was~~ to determine for each subsample patterns of personnel shifts from one service career point to another, distribution of time spent in First Duty MOS, and nature of the relationship between personnel shifts and Army Classification Battery scores. ↗

SAMPLING AND PROCEDURE

A random 10% sample was drawn of Army enlistees processed by Replacement Branch, TAGO from November 1958 to August 1960. Table 1 contains the specific time periods during which the sample was drawn for each MOS. Blank Forms 20 were mailed to the last known military address of the 613 enlisted men comprising

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the sample, as well as to the U. S. Army Records Center, St. Louis, for EM who had been separated from service or for whom the last military address was unknown, with the request that the following items of information be completed: MOS Code, Enlisted or Inducted, Prior Military Experience, Assignment Limitations, Aptitude Tests, Other Tests, Military Education, Foreign Service, Enlisted or Volunteered for, Classification in MOS, Record of Assignments.

Table 1

TIME PERIOD DURING WHICH EACH MOS WAS SAMPLED

MOS	Time of Drawing	N
050	Sep to Dec 1959	37
051	Oct to Dec 1959	101
140	Oct to Dec 1959	256
202	Dec 1958 to Aug 1960	19
240	Nov 1958 to Nov 1959	43
246	Dec 1959 to Jun 1960	49
250	Nov 1958 to Nov 1959	54
355	Nov 1958 to Dec 1959	54
TOTAL	Nov 1958 to Aug 1960	613

Table 2 shows that of the 613 Forms mailed out, 79.1% were usable. Of the remainder, 12.9% were not returned, and 8.0% were unusable. The primary reason for invalidating returns was the lack of some essential information on a Form 20. Other men were dropped if they had: enlistment commitments which affected later assignments; assignment limitations, e.g., physical defects which prohibited their entering or continuing their DA allocated MOS; and insufficient time in service, i.e., deserters and men on six months active duty. After all eliminations had been made, 485 men remained in the sample.

Table 2
DISTRIBUTION OF RETURNS TO MAILED FORMS

Nature of Returns	Reason for Elimination	N	% Return
Usable	---	485	79.1
Unusable	Total ---	49	8.0
	Insufficient Information	25	4.1
	Enlisted or Volunteered for		
	Career group enlistees	11	1.8
	Airborne volunteers	2	.3
	Assignment Limitations		
	Physical defects	5	.8
	Aliens	2	.3
	Insufficient Time in Army		
	Six months active duty	2	.3
	Desertion	2	.3
Unreturned	---	79	12.9
Total Forms Mailed	---	613	100.0

STATISTICAL ANALYSIS

The first breakout of data was concerned with determining the extent and pattern of MOS shifts at the five service career points. For each of the eight subsamples, the DA allocated, first Advanced Individual Training, second Advanced Individual Training, First Duty, and Second Duty MOS were determined. Within a particular subsample, cases were divided into five groups, defined as containing EM who:

- (1) did not go to their first AIT in their DA allocated MOS;
- (2) took first AIT in their DA allocated MOS, but received a second AIT in a different MOS;
- (3) received AIT in their DA allocated MOS but held a different First Duty MOS;
- (4) had AIT and First Duty in their allocated MOS, but changed MOS in Second Duty; and
- (5) held their DA allocated MOS for the period covered by this study.

A second breakout was performed to obtain the distribution of time spent in First Duty MOS. For each subsample, the time spent by personnel in First Duty was divided into four categories: (1) 1-2 months; (2) 3-5 months; (3) 6-11 months; and (4) 1 year and over.

ACB scores corresponding to DA allocated and First Duty MOS were obtained from Forms 20 for each man. The highest score that an individual attained was also recorded as an index of the individual's overall capacity, and the occupational area corresponding to this score was noted.

RESULTS

EXTENT AND PATTERN OF MOS SHIFTS

The extent and patterns of MOS shifts at the service career points varied with the particular subsample. Each subsample is therefore considered separately below.

MOS 050. Figure 1 illustrates the number of men leaving MOS 050 at each service career point. At the top of the diagram the 30 men originally allocated to MOS 050 are indicated. The horizontal lines connected to the center vertical line stand for the service career points where MOS shifts occurred. Of the original N of 30, shifts from DA allocated MOS 050 occurred for: two men for first AIT; one man for second AIT; sixteen men for First Duty; and nine men for Second Duty. Of the sixteen EM whose first shift occurred in First Duty, ten remained in the 05 entry group, while six went to a different entry group. A similar breakout is presented for those nine individuals who left MOS 050 in Second Duty, three remained in the 05 entry group while six shifted to an entry group other than 05. At the bottom of Figure 1 it is shown that only two of the original 30 men remained in MOS 050 after the two-year period spanned by the survey.

MOS 051. Only four of the 78 EM originally allocated to MOS 051 were retained for the period covered by the study (Figure 2). The greatest quantitative change occurred at first AIT, but of the 66 men shifted, 65 remained in the 05 entry group. However, only 39 of the 65 remained in the 05 entry group for First Duty.

MOS 140. Figure 3 shows that 75 of 211 men stayed in MOS 140 for a two-year period, with the greatest loss of manpower occurring about equally at First Duty and at Second Duty. Of the 68 men leaving MOS 140 for First Duty, 8 remained in the 14 entry group; 13 remained in the combat occupational area (100) but in an entry group other than 14, and 47 were sent to an occupational area other than 100. Of those leaving for Second Duty, 23 remained in entry group 14, an additional 11 remained in occupational area 100, and 28 went to an occupational area other than 100.

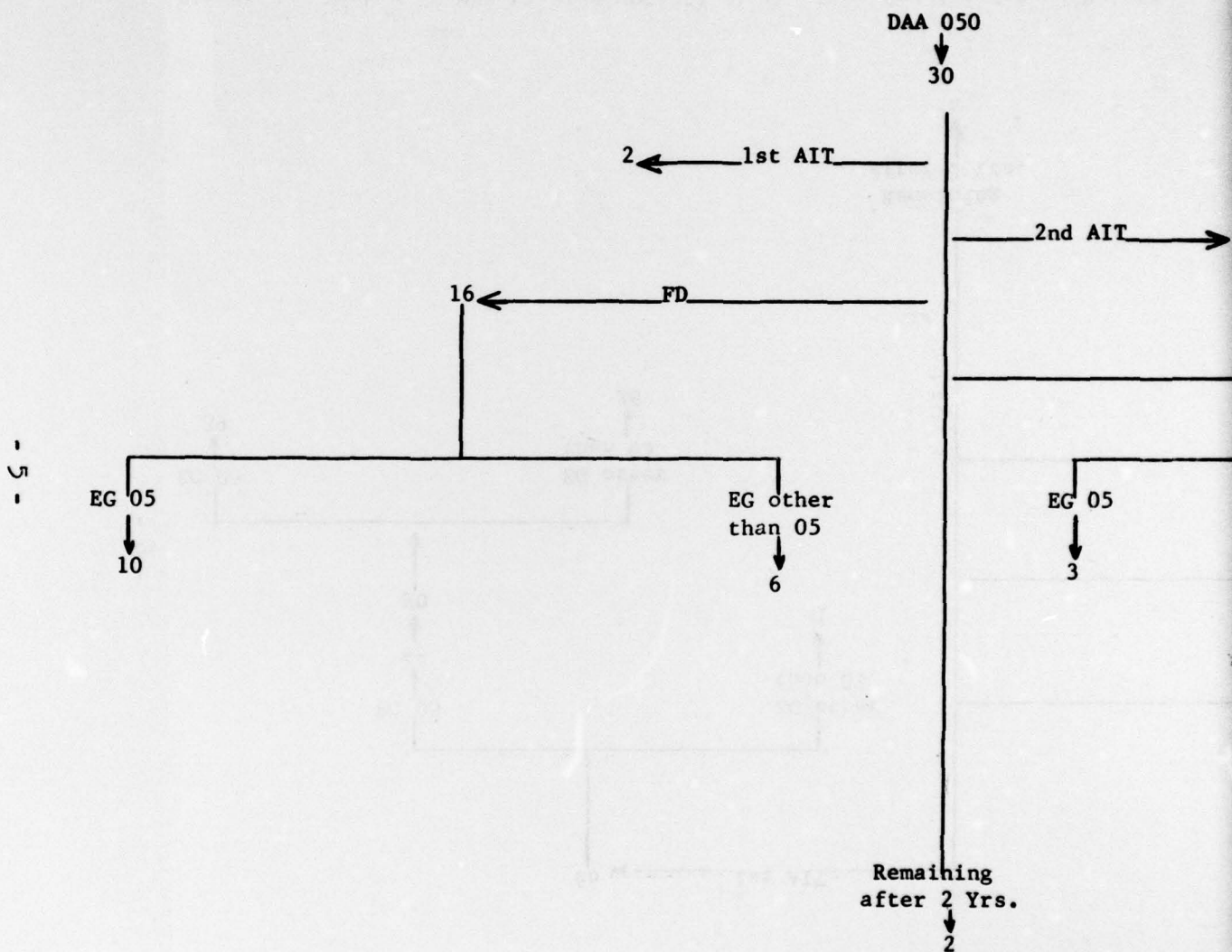
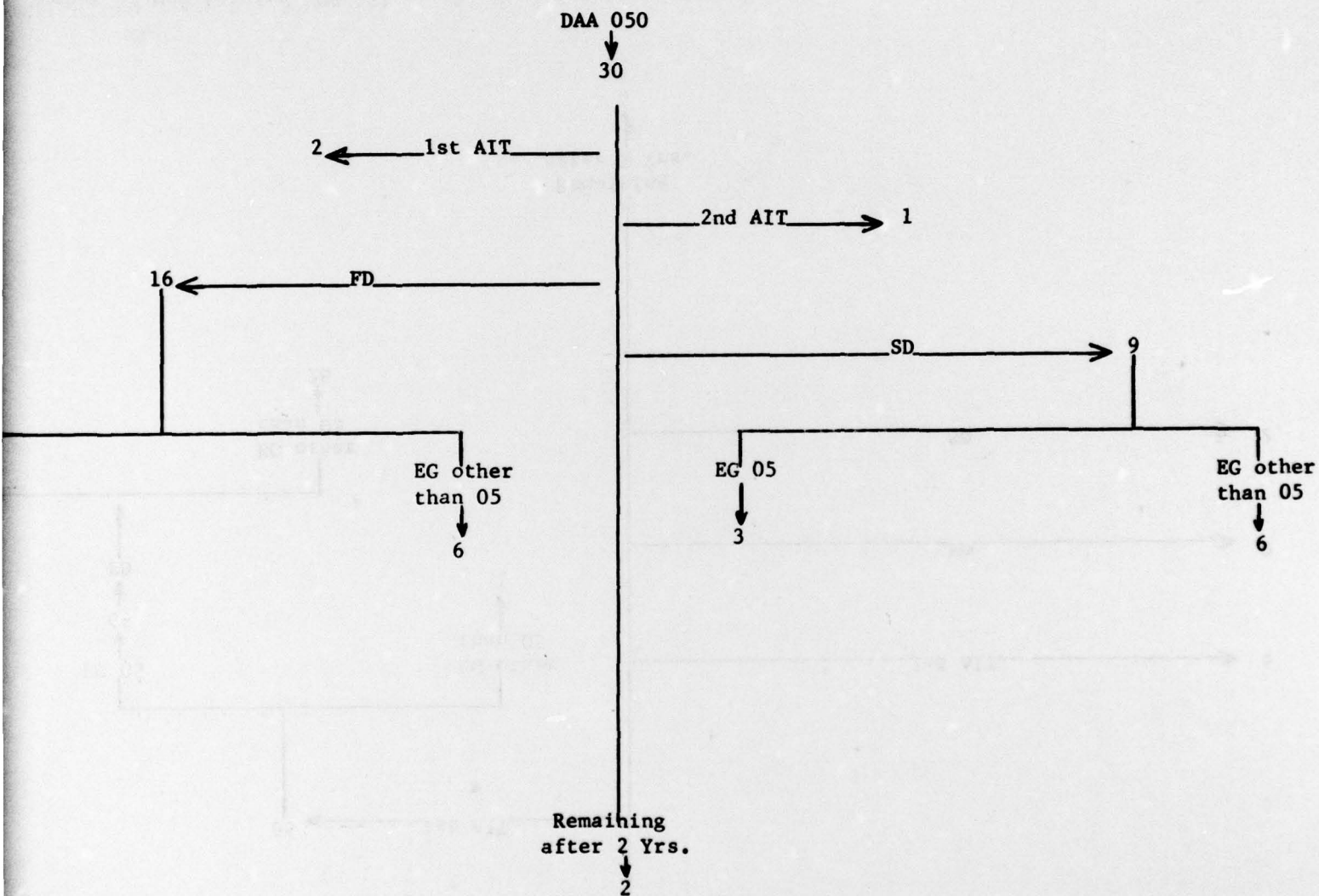


Figure 1. Number of Men Leaving MOS 050 at the Five Service Career Points



on Leaving MOS 050 at the Five Service Career Points

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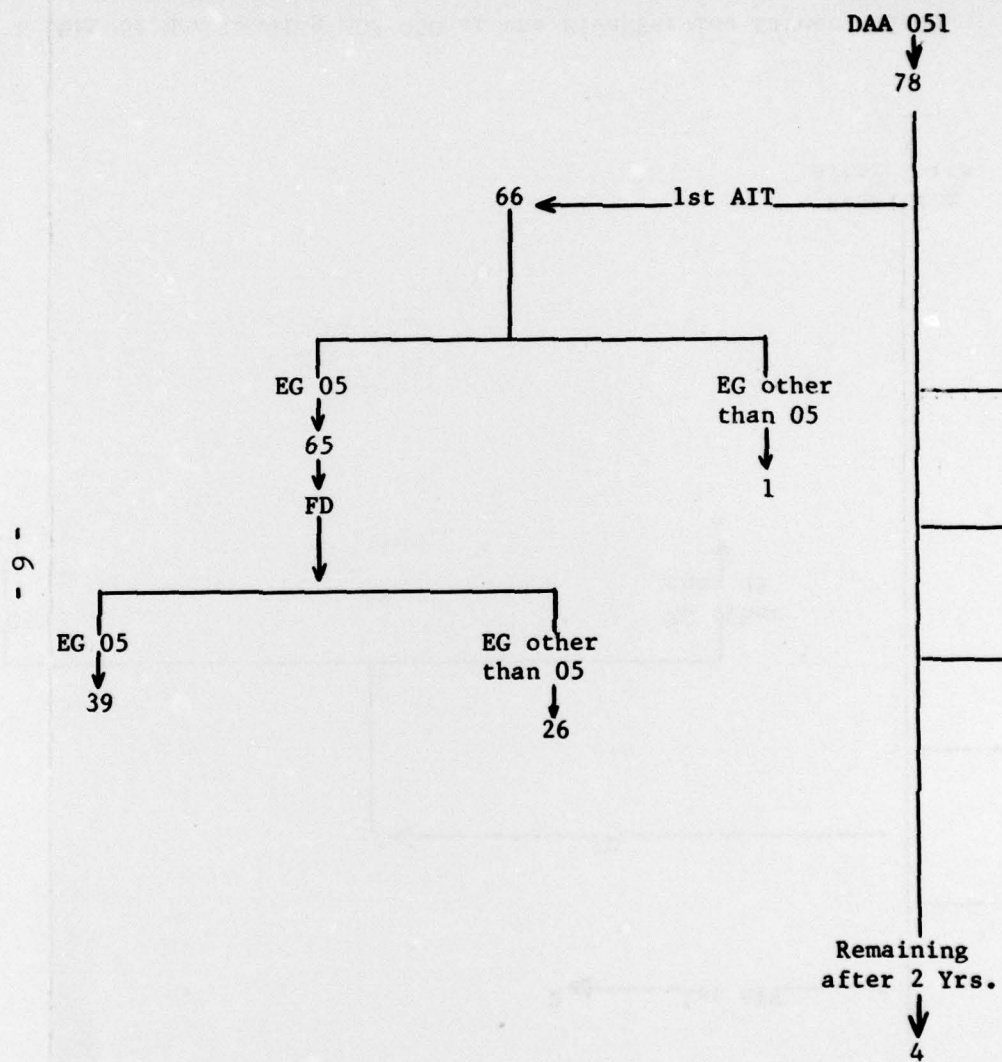
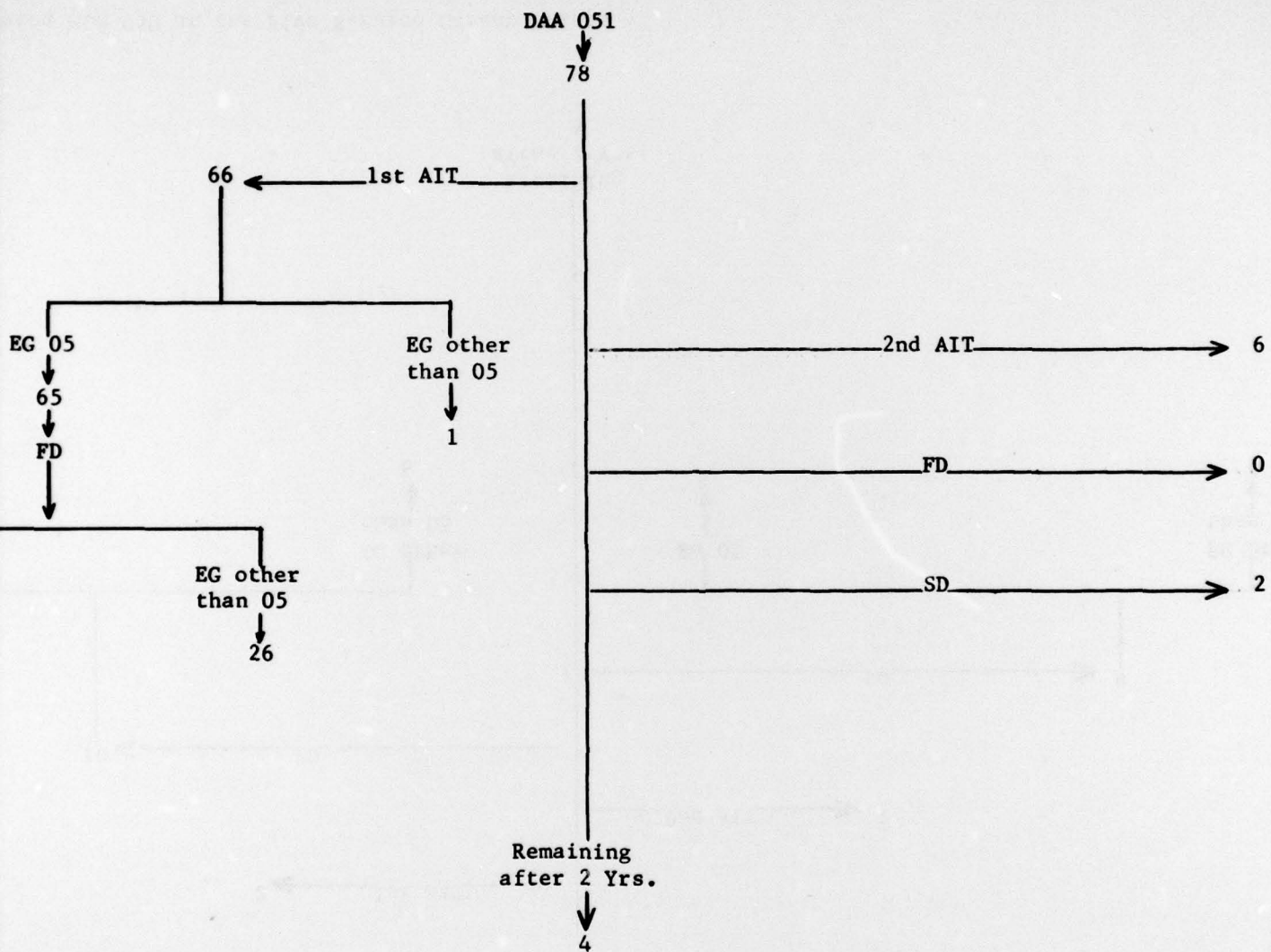


Figure 2. Number of Men Leaving MOS 051 at the Five Service Career Points



Number of Men Leaving MOS 051 at the Five Service Career Points

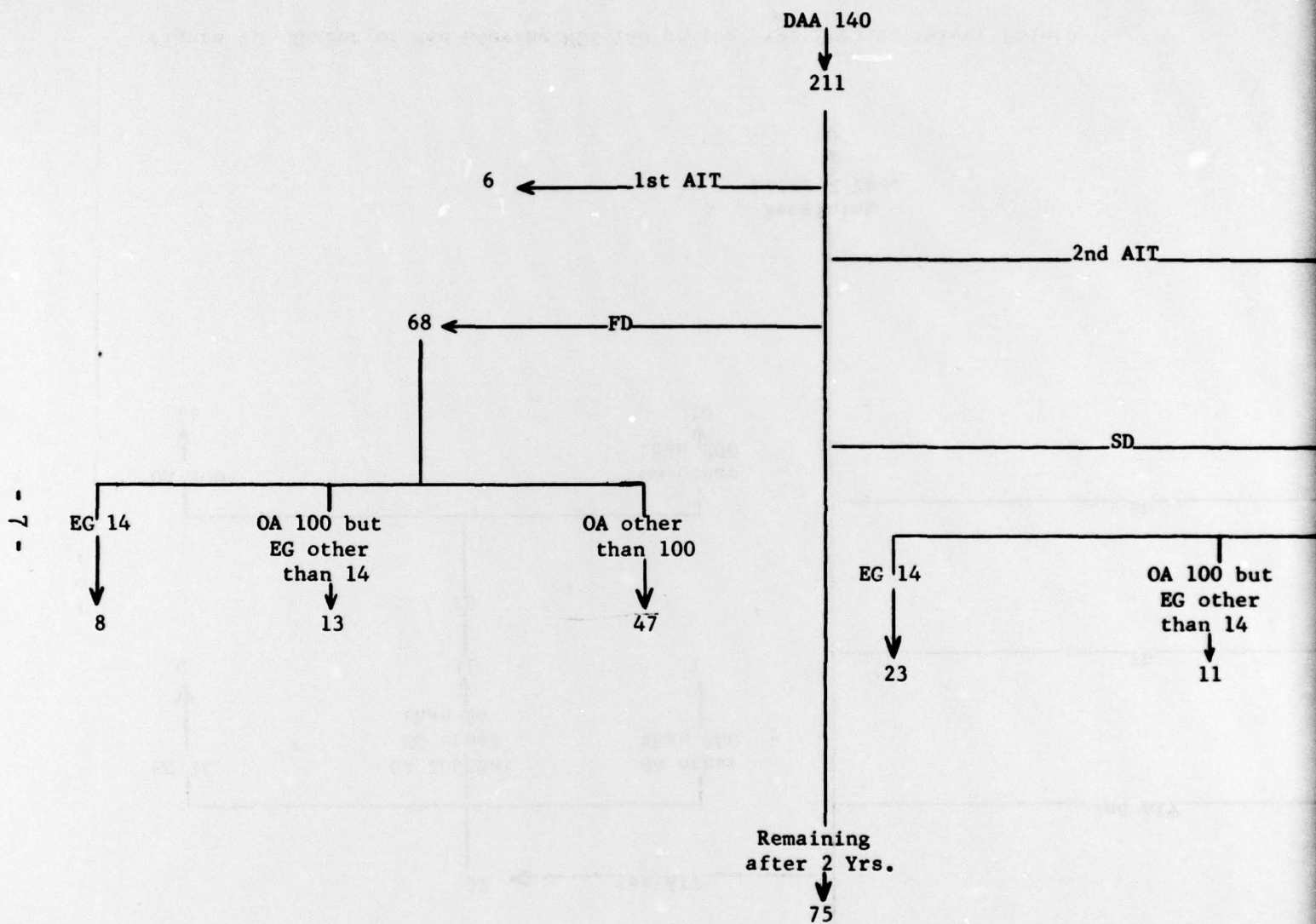
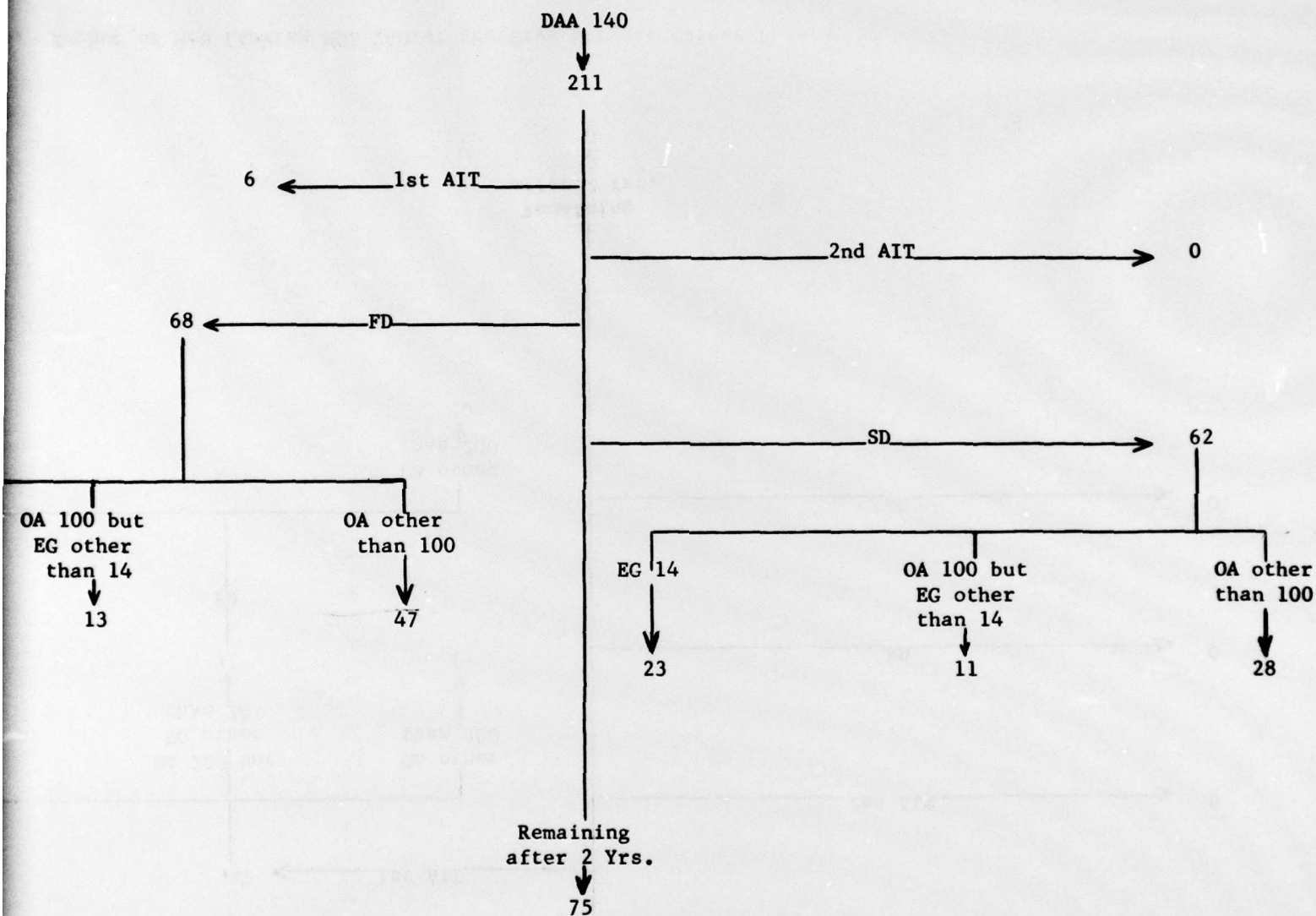


Figure 3. Number of Men Leaving MOS 140 at the Five Service Career Points



Number of Men Leaving MOS 140 at the Five Service Career Points

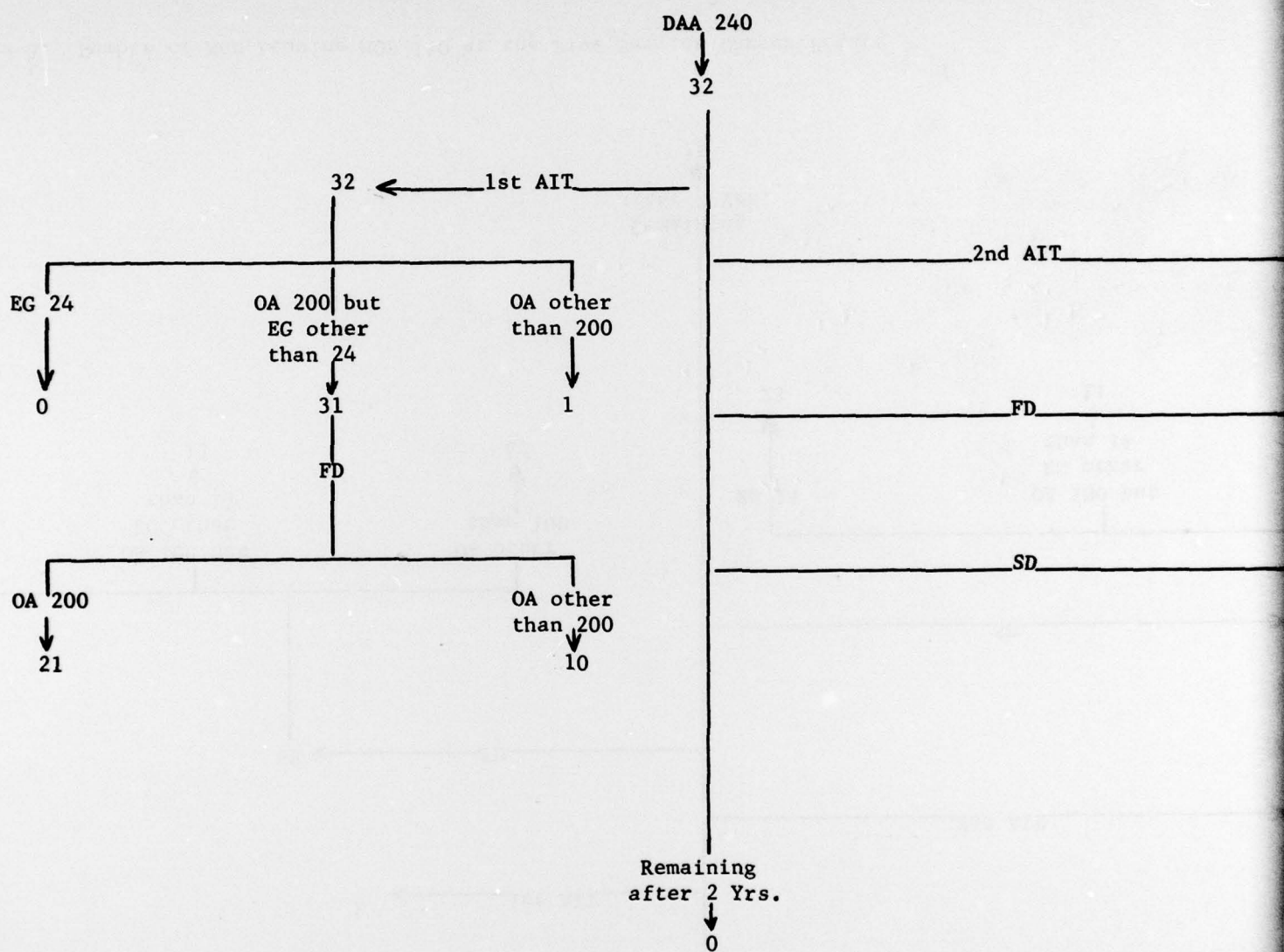


Figure 4. Number of Men Leaving MOS 240 at the Five Service Career Points

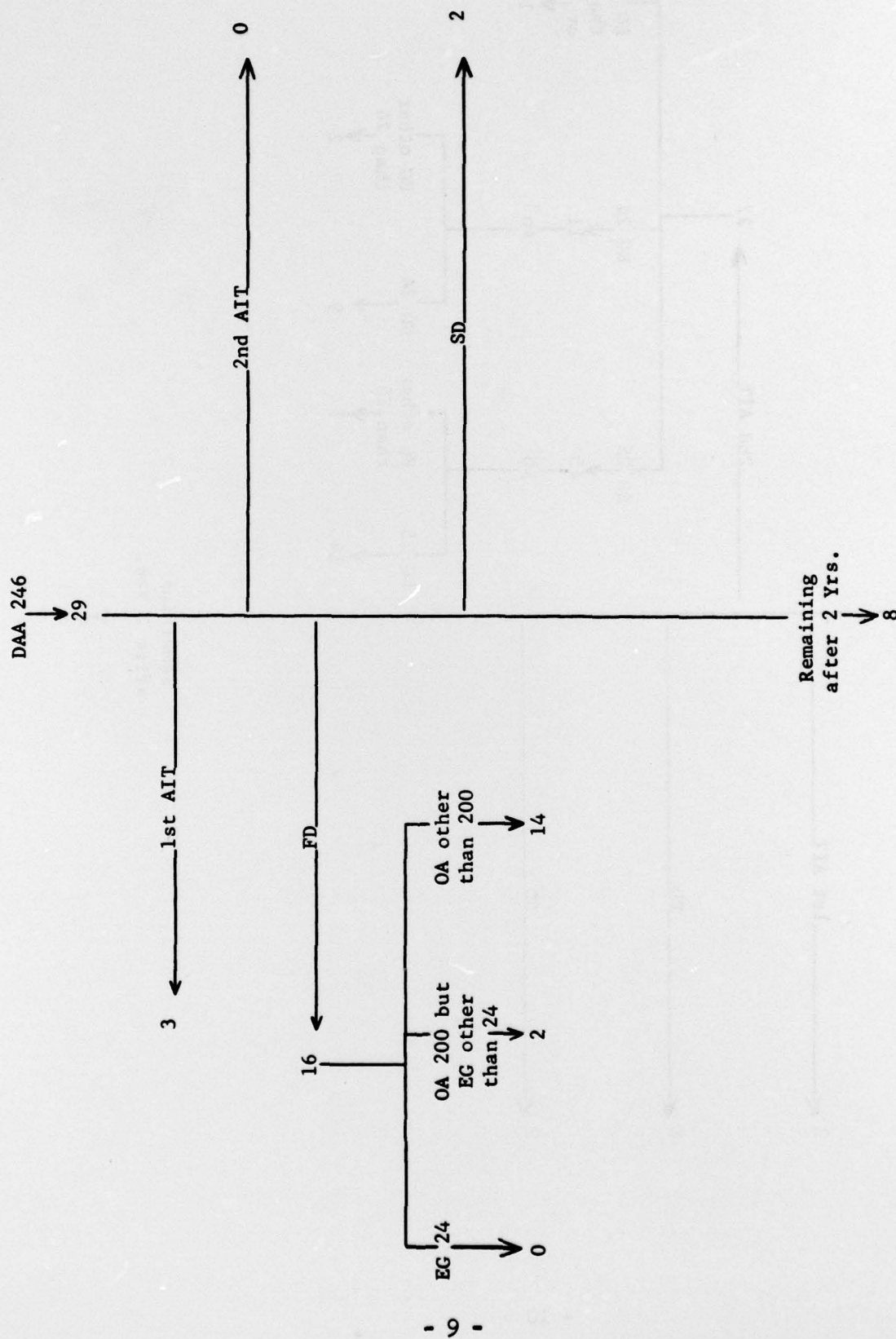


Figure 5. Number of Men Leaving MOS 246 at the Five Service Career Points

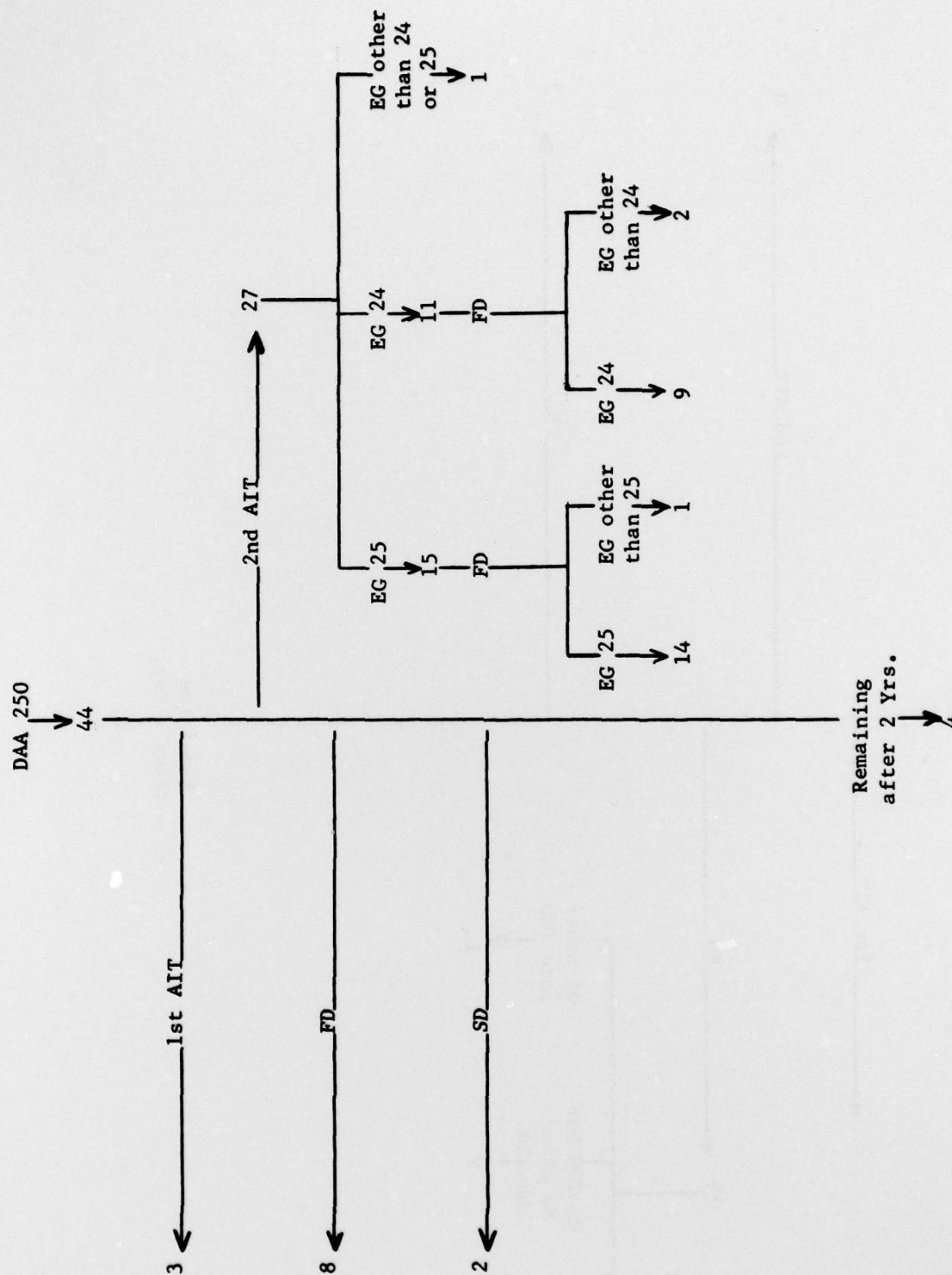


Figure 6. Number of Men Leaving MOS 250 at the Five Service Career Points

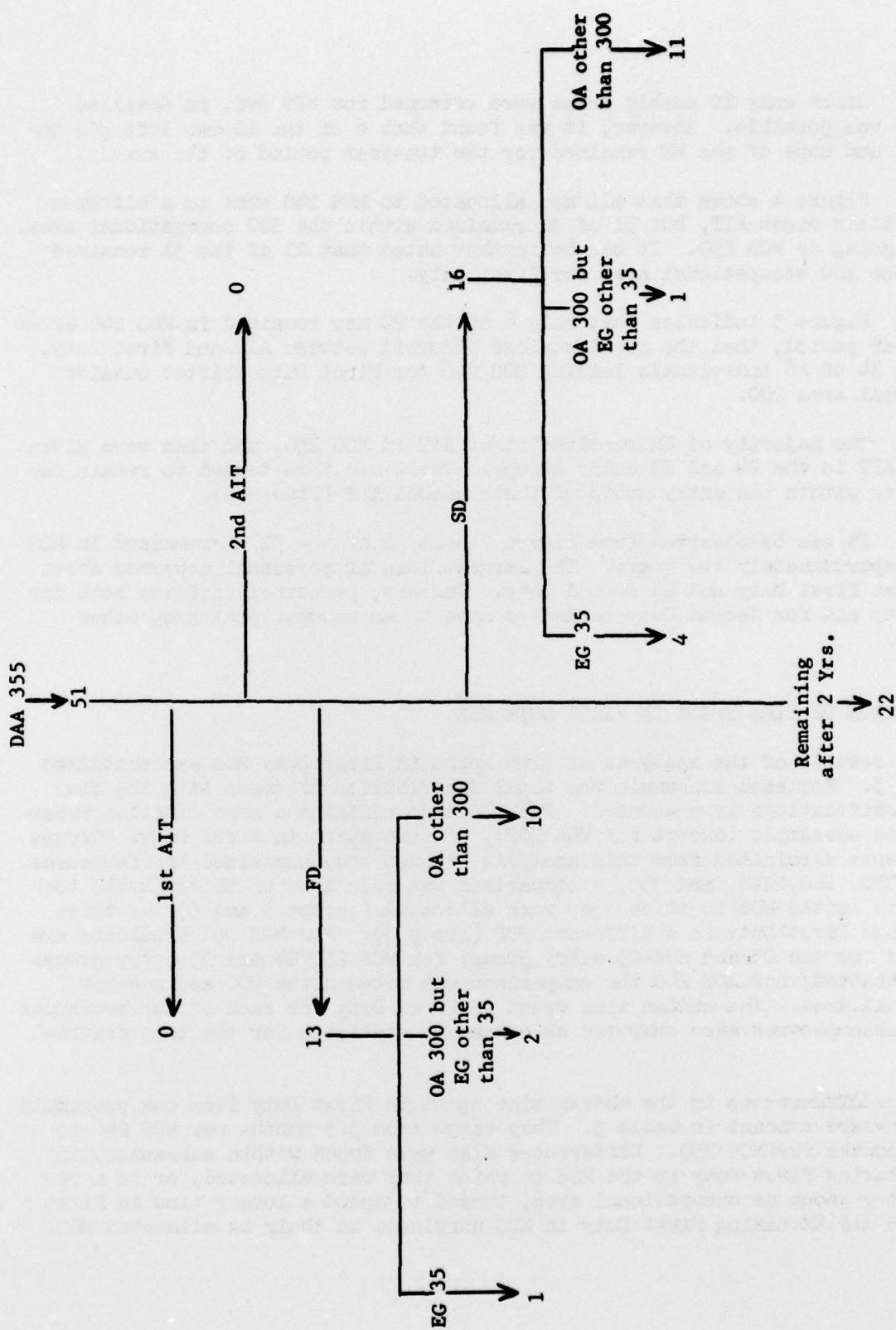


Figure 7. Number of Men Leaving MOS 355 at the Five Service Career Points

MOS 202. Since only 10 usable cases were returned for MOS 202, no detailed analysis was possible. However, it was found that 6 of the 10 men left MOS 202 for AIT, and none of the EM remained for the two-year period of the survey.

MOS 240. Figure 4 shows that all men allocated to MOS 240 went to a different MOS for their first AIT, but 31 of 32 remained within the 200 occupational area, with 28 going to MOS 250. It can be further noted that 21 of the 31 remained within the 200 occupational area for First Duty.

MOS 246. Figure 5 indicates that only 8 of the 29 men remained in MOS 246 after a two-year period, that the greatest loss occurred between AIT and First Duty, and that 14 of 16 individuals leaving MOS 246 for First Duty shifted outside operational area 200.

MOS 250. The majority of EM received first AIT in MOS 250, and then were given further AIT in the 24 and 25 entry groups. These men then tended to remain for First Duty within the entry group of their second AIT (Figure 6).

MOS 355. It can be observed from Figure 7 that 22 of the 51 EM remained in MOS 355 for approximately two years. The largest loss of personnel occurred about equally at First Duty and at Second Duty. Further, personnel shifting both for First Duty and for Second Duty tended to move to an occupational area other than 300.

DISTRIBUTION OF TIME SPENT IN FIRST DUTY MOS

The results of the analyses of time spent in First Duty MOS are contained in Table 3. For each subsample the total distribution of cases into the four time classifications is presented. Table 3 also contains a more detailed breakout within subsample (except for MOS 202), of time spent in First Duty. Groups 1 and 2 were eliminated from this analysis because they contained too few cases. For MOS 050, 140, 246, and 355, a comparison was made between those EM who took First Duty in the MOS to which they were allocated (groups 4 and 5) vs. those EM who took First Duty in a different MOS (group 3). For MOS 051 breakouts are presented for the 05 and non-05 entry group; for MOS 250 24 and 25 entry groups were contrasted; for MOS 240 the comparison was between the 200 and non-200 operational area. The median time spent in First Duty for each of the breakouts within subsample was also computed as a summary statistic for the time distributions.

Large differences in the median time spent in First Duty from one subsample to another are evident in Table 3. They range from 5.3 months for MOS 246 to over 12 months for MOS 250. Differences also were found within subsample, in that EM taking First Duty in the MOS to which they were allocated, or in a related entry group or occupational area, tended to spend a longer time in First Duty than did EM taking First Duty in MOS unrelated to their DA allocated MOS.

Table 3

DISTRIBUTION AND MEDIAN OF TIME SPENT IN FIRST DUTY MOS BY SUBSAMPLE

MOS		TIME (in Months)				Median	N
DAA	FD	1 to 2	3 to 5	6 to 11	12 or More		
	Total	3	6	10	11	9.1	30
050	050	1	1	6	3	9.0	11
	Non-050	2	4	3	7	9.5	16
	Total	14	13	13	38	11.0	78
051	05 EG	9	4	6	20	11.8	39
	Non-05 EG	5	9	6	12	7.5	32
	Total	47	16	60	88	9.8	211
140	140	22	12	45	58	10.1	137
	Non-140	23	4	15	26	8.3	68
202	Total	2	1	5	2	7.9	10
	Total	5	7	7	13	8.9	32
240	200 OA	3	4	5	9	9.7	21
	Non-200 OA	2	2	2	4	8.5	10
	Total	9	6	6	8	5.3	29
246	246	2	2	1	5	5.5	10
	Non-246	6	4	3	3	4.0	16
	Total	6	4	9	25	12+	44
250	25 EG	2	2	2	8	12+	14
	24 EG	2	1	1	5	12+	9
	Total	7	8	15	21	9.7	51
355	355	6	4	8	20	12+	38
	Non-355	1	4	7	1	6.8	13

RELATIONSHIP BETWEEN PERSONNEL SHIFTS AND ARMY CLASSIFICATION BATTERY SCORES

For each subsample, the average DA allocated, First Duty, and highest aptitude area scores were computed and are presented in Table 4. Also contained in Table 4 is a more detailed comparison within subsample, similar to that described above for Table 3. The quality of personnel allocated to the eight subsamples varied considerably, with the MOS within the 200 operational area (MOS 202, 240, 246, and 250) obtaining EM with DA allocated scores averaging in the low 120's while MOS 140 received EM with average DA allocated scores of about 100. The three other subsamples (MOS 050, 051, and 355) obtained EM with average DA allocated scores from 112 to 116. A comparison of scores for those EM taking First Duty in the MOS to which they were allocated (or related entry group or operational area) with those EM taking First Duty in MOS unrelated to DA allocated MOS indicates that differences are a function of the particular subsample, i.e., there is no general trend across the eight subsamples. A final observation from Table 4 is that for those individuals who took First Duty in an MOS unrelated to their DA allocated MOS, there was little difference between average DA allocated and First Duty scores; if anything, there was tendency for First Duty scores to be lower.

DISCUSSION

Cost of non-retention in an MOS was evaluated in various ways. For example, the lower the proportion of EM remaining in their DA allocated MOS after a lapse of two years, the poorer was regarded the overall retention. Personnel loss was considered most costly if the shift of MOS occurred between AIT and First Duty, since no duty time was received in return for training. On the other hand, if upon changing MOS, EM remained within the same entry group, independent of the point in their service career when the shift occurred, some transfer of training from the previously held MOS might have resulted which would have tended to reduce the cost of the shift to the Army.

For all subsamples less than 50% of the EM originally allocated to an MOS remained in the MOS for the approximate two-year period of the study. In fact, in one particular subsample (MOS 240), all personnel received AIT in MOS other than MOS 240.

Of those EM who left their DA allocated MOS shifts occurred between DA allocated and AIT, first AIT and second AIT, AIT and First Duty, and First Duty and Second Duty. Those EM leaving their DA allocated MOS after AIT represent the most costly loss to the Army, since no duty time is received in return for the training imparted during AIT. The median time spent in First Duty tended to be considerably less than a year, and in the case of MOS 246, less than six months. Therefore, even for the group who took First Duty in their DA allocated MOS, the benefit to the Army was decreased by the early departure of EM from First Duty. For the present sample of MOS, the only apparent long term return to the Army for training EM in AIT was from those EM who remained in their DA allocated MOS for the period covered by the study.

Table 4

MEAN DA ALLOCATED, FIRST DUTY, AND HIGHEST APTITUDE AREA SCORES
BY SUBSAMPLE

MOS		SCORES			N
DAA	FD	DAA	FD	HIGHEST AA	
050	Total	111.9	109.3	122.6	30
	050	105.9	105.9		11
	Non-050	117.6	111.5		16
051	Total	112.9	112.6	122.6	78
	05 EG	114.3	114.3		39
	Non-05 EG	109.7	109.5		26
140	Total	99.7	101.2	113.7	211
	140	98.2	98.2		137
	Non-140	102.3	107.2		68
202	Total	123.2	121.1	130.9	10
240	Total	128.6	129.1	137.1	32
	200 OA	131.8	131.8		21
	Non-200 OA	123.9	123.3		10
246	Total	127.3	125.5	134.7	29
	246	128.0	128.0		10
	Non-246	130.0	122.5		16
250	Total	126.6	127.5	136.7	44
	25 EG	129.9	129.9		20
	Non-25 EG	123.9	129.7		9
355	Total	115.9	115.6	121.5	51
	355	116.6	116.6		38
	Non-355	115.0	112.7		13

Shifting personnel from their DA allocated MOS might be justified if it would improve the utilization of personnel, i.e., employ individuals in an occupational area in which they have the greatest aptitude. This situation would have been indicated in the present study if the average total First Duty score had been significantly higher than the average total DA allocated score; actually it was slightly lower (117.7 and 118.2 from Table 4). The difference between DA allocated and First Duty average scores was negligible for all subsamples and for five of the eight subsamples the average score actually decreases from DA allocation to First Duty MOS. It is evident that personnel shifts did not result in an increase in utilization of existing aptitudes.

CONCLUSIONS

During the first two years of service careers there is extensive shifting of personnel from the MOS to which they were allocated. This conclusion is similar to that found in a parallel study conducted for infantry MOS (Wiskoff and Pentony, 1963). Further, it appears that the resulting cost to the Army of shifting personnel is not justified in terms of improved utilization of EM, that in fact the average aptitude levels resulting from original allocation are as good if not better than those resulting from subsequent personnel shifts.